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AUTHOR	Tiedeman, David V.
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ABSTRACT

An enlargement of the understanding of the career for the individual is necessary in order to put the imperative need of work for everyone more into perspective. First, secondary education in 1980 needs to be taken, not as a high school education but rather as an educational process reserved for those in need of an interdependent, not completely independent, learning experience in order to progress in the expansion of their intelligence and career according to their own purposes. It is proposed that this secondary education take place in a Learning Resource Center (LRC) with the basic instructional aid being an Educational Machine. Counselors at the LRC would help the individual to convert his learning into real life experiences. The education machine would provide the series of "dress rehearsals" which a person needs in career in order to achieve realization of self processes in the choice processes of career. The ultimate goal for this program includes the integration of community resources for the common good, individualization of instruction, and education for individuality (including therapy or education for the mentally ill) leading to the fostering of identification, the fundament of identity. (Author/KJ)

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INFORMATION SYSTEM FOR VOCATIONAL DECISIONS

Project Report No. 18

THE CULTIVATION OF CAREERS THROUGH GUIDANCE AND VOCATIONAL EDUCATION

David V. Tiedeman

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Harvard University

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David V. Tiedeman
Graduate School of Education
Harvard University

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*Speech, Provincial Association of Protestant Teachers, Montreal, 22 November 1968.

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1.0 Vocational Education and Career

Vocational education presently enjoys a comfortable degree of public support in today's educational enterprise. On the one hand, citizens in the United States and Canada believe that vocational education is a means of solving immediate social woes because it provides needy persons with work skills which in turn allow them to live in the dignity of return based on competence, effort, and risk of self regard. On the other hand, citizens in both countries believe that vocational education must also help solve the longer term problem of changing the work patterns and forms of economic return of each person so that new forms of productivity can more easily and continuously take their places in our progressing civilization. I shall argue that this latter goal requires education for career skills but not at expense of the education for occupation and work skills which we presently attempt in our today's vocational-technical education.

Shortsighted citizens, politicians, and educators, at least in the United States, occasionally speak and act as if these two national vocational goals cannot be achieved simultaneously. Unfortunately, the cause of vocational education suffers from such talk and action; two necessary activities are then erroneously brought into competition with each other by unscrupulous persons who may want either one of the goals at any cost to the other.

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*Speech, Provincial Association of Protestant Teachers, Montreal, 22 November 1968.

In this paper, I particularly address the second goal or long term goal for vocational-technical education, namely that of changing the meaning of work for citizens. In doing so, I do not mean to detract from an immediate goal of vocational-technical education, namely that of aiding our countries' attainments of full employment. For me, full employment must take place just as soon as the reason and passions of men will permit. Nevertheless, the long view must also be enunciated, clarified, and advocated along with that imperative if the necessary is to have the force of understanding, not just that of toleration. This is the task I ask you to consider with me, namely to enlarge your understanding of the career for the individual in order to put the imperative need of work for everyone more into perspective.

2.0 Secondary Education 1980

I shall address the matter of career through vocational education by thinking of the future. I do so in order to help us see our current activity in terms of what it might become, not just in terms of what it is. Each of us needs to get above his daily activity from time to time in order to see what is possible and needs to be done. When we attempt such a perspective, we may well simultaneously despair of attaining the possible because we think that needed changes will have to go on immediately. Actually change can take place slowly if it is directed by our existing intentions. It is for this reason that I elect to think in terms of secondary education as it might be in 1980, not as it is in 1968. The twelve year span necessary to accomplish the considerable change now possible to us may well make the difficult more desirable in

your mind. If so, I will have accomplished my objective, namely to make you discontent with what you do now because you see goals and means of doing a needed and better job in the future.

The mere desire to think about a high school in 1980 presents a trap I suggest we avoid, namely the trap of construing secondary education in terms of a high school, or for that matter, of any school at all. But if we do not think of our subject as that of a high school, or of at least a school, how can we conceive it?

In this paper, I elect to consider secondary education, not a high school. However, I need some bounds. Therefore, I shall first bound my concept by age. The lower age bound of my imagined secondary education will be at about age 12, not age 14. But I shall not bother to bound the upper age of my concept. Secondary education is conceived by me as enjoyed at any needed and/or desired time of life once an elementary grounding exists.

I choose 12 years as the lower age in which secondary education is to occur because I want to discuss guidance and psychological services associated with secondary and vocational education in terms of the adolescent and adult periods in human development which begin around that age. I achieve capacity to discuss education in terms of human development rather than in terms of school organization at expense of difficulty in specifying the epistemological limits which will then actually restrain my secondary education of 1980 with its associated career and vocational education. However, several guidelines can nevertheless be imagined with profit. For instance, let us presume that my secondary education has been preceded by an education which in one of its aspects has already created skill in

reading, writing, and reckoning. In others of its aspects, let's also presume that the prerequisite elementary education has provided further specific cultivation 1) of interpersonal skills and 2) of inquiry in scientific, social scientific, and humanistic realms from levels in which they are naturally initiated in childhood by the family.

In my secondary education, individually elected paths in the realms of science, social science, and humanities will then be presumed available to students. There will be no required courses in my secondary education. Furthermore, education is to take place in experience, not just in books and classes. Thus distinctions between so-called general and vocational education in today's secondary education have no real validity in my 1980 High School. For all these reasons, secondary and tertiary education in my future for education will be relatively indistinguishable. However, one distinction which will prevail is that students in my future secondary education 1) will be adolescent if they are educating themselves in immediate succession from elementary education, or 2) in presumed need of a more highly supervised introduction to continuing education if they are then present in secondary education after having absented themselves from education for an extended period of time. In sum then, what I presume is that my secondary education of the future should be reserved for those in need of an interdependent, not completely independent, learning experience in order further to progress in the expansion of their intelligence and career according to their own purposes. The consequence of this presumption is that adolescent or adult students who can profit from highly independent study and experience will actually be in tertiary, not secondary, education.

I engage your mind as I do because I want you to imagine secondary education taking place in a Learning Resources Center, not in a high school. The present theory of guidance suggests that such an organization of secondary education is not only possible but also desirable as an improved educational experience for all. The imagined existence of such an organization, challenges the mind to state both how the organization can be realized and what that realization will in turn require of guidance and psychology in 1980.

3.0 Learning Resources Center 1980

3.1 Integration with Services of the Community for a Sense of Community in Services.

Learning Resources Center 1980 must be of its community. I mean this statement in two senses.

One of the senses I mean is the Learning Resources Center must be an integral part of community centers for health, work, government, leisure and worship. Is that a physical impossibility? No, not really!

You will find that I give an Education Machine or Mechanical Book the central role in my Learning Resources Center 1980. This Education Machine will function much as today's libraries function. However, it will also be available to people at home as well as at the Learning Resources Center. It will only be at the Learning Resources Center that tutorial and/or counseling help will be available with the Education Machine. However, the Education Machine will itself be available to any qualified user who keeps his qualification valid by not getting into difficulty concerning which the machine recommends referral without further machine contact until duly re-authorized at a later time. Thus the physical location necessary will be that for a computing facility with supporting

space for tutors and counselors. This should mean that integration of this space with that for health, government and worship should not be too difficult particularly because many of the informational operations associated with those functions will themselves be computerized by 1980. The association of the Learning Resources Center with facilities for work and leisure may be harder to accomplish than its association with functions of health, government, and worship. However, I do mean to stress the necessity that these functions of work and leisure not be permitted to be fully independent from those of education. It is the present separation of education from the functions of health, work, government, recreation, and worship which causes dysfunction in man's relation with his need for community largely because of the artificial difficulty of movement from one to the other.

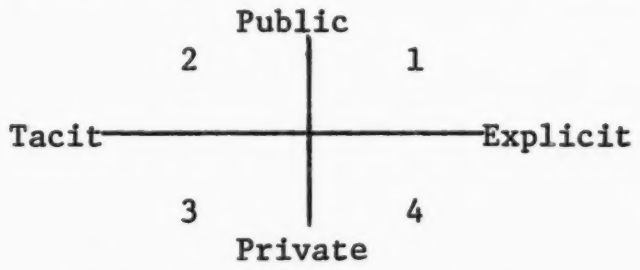
Learning Resources Center 1980 must therefore have arbitrary barriers in social structures reduced from their present levels which cause people not to experience a second or psychological sense of community. Learning Resources Center must foster a sense of individuality in every citizen but not at expense of a sense of community as well. However, in 1980, I hope that the social sense of community can be interiorized, not exteriorized as it largely is today among the alienated who speak of "our," not their, corrupt society. It will thus become a real part of identity, not a fact of alienation as is now said to be so dominantly the case. However, the psychological sense of community cannot be developed unless it evolves as a part of basic trust. In order for basic trust to have validity, access to community by way of health, work, government, leisure, and worship must all be available when man adopts at recurring moments in life the basic

attitude of education, namely to come to know and to continue to want to know (Landy, 1968). The common good will have to have more emphasis along with an emphasis on individuality than either now receives if the necessary sense of psychological community is to be interiorized at all extensively.

Community resources which are truly organized in keeping with the needs of individuality--and thereby nurture that individuality to the generative level possible in potential for all--need in turn have no concern for healthier and sturdier communities. When individuality exists in generative form, a self-sustaining dynamic also exists; individuals help the community help individuals. Adaptation will thereby be moved upward in the scale of civilization to self expansion for self and others.

3.2 The Tacit Dimension and Educational Resources. The primary task of an educator is to facilitate the assimilation of the known. An educator risks individual freedom and responsibility when he facilitates the assimilation of the known in ignorance of the processes of knowing.

Landy (1968) finds it convenient to conceive knowledge in relation both to public and private knowledge and, following Polanyi (1966), to explicit and tacit knowledge as well. Landy then proposes that these two dimensions be imagined to span a Cartesian space in which quadrants are numbered in the customary way, thus:



Landy first proves that knowledge exists in each of the four quadrants of the diagram. He then goes on to note that most knowledge today associated

with education is in quadrant 1, the public and explicit quadrant. However, Landy argues as does Polanyi that tacit and private knowledge of quadrant 3 is interiorized knowing which is of as much importance to educational interests as is public and explicit knowledge. In fact, Richards (1955, 1968) argues that it is the potential feedforward inherent in private and tacit knowledge which actually provides the directional origin and motivational basis for knowing, the self-sustaining drive for effective curiosity.

The task of the educator is to help each student see and trust his tacit dimension. The processes and relationships inherent in education should in no way contradict the actuality and validity of tacit knowing. In fact, education should focus on <u>both</u> the explicit and the tacit dimensions of knowing; it should encourage the cultivation of tacit knowing; it should help a person to achieve a discourse appropriate to his tacit processes. In this way education can encourage a student to come to know and to continue to want to know, the only two valid criteria for education.

Field and I (Tiedeman and Field, 1965) have assessed the attention which we in the United States now give to tacit knowledge in education and personnel services. Our assessment finds such attention shamefully lacking, in fact almost nonexistent. Our assessment is in turn associated with recommendations to our Federal government for changing Guidance-in-schools into the profession of Guidance-in-society. The recommendations associated with that assessment indicate the many great changes in conceptions, attitudes, and support which will have to occur for the revised organization to ecist. I shall therefore not again belabor those recommendations here. I shall merely assume for our purposes that they <u>have</u> been followed both in the United States and Canada and that the goal of cultivating the

tacit dimension in every citizen is publicly accepted by 1980 in order that my Learning Resources Center can in turn be organized so as best to realize the tacit dimension of man.

4.0 The Education Machine 1980

4.1 Individualizing Instruction by Means of Computer-Assisted Instruction.

At the present moment, we are more or less accustomed to the fact that the computer can assist in instruction. We understand this assistance largely in terms of the presentation of material and of a computer response based in whether the student's prior response has been distinguished as right or wrong. We also understand that the computer can keep track of, or audit, right and wrong responses. This auditing can in turn be used to branch the student to parts of the instructional programs appropriate for his present understanding of a subject.

The computer is presently used in education largely to individualize instruction. By this is meant, the placing of a person in closer juxtaposition, more frequently and more consistently, with textual material considered appropriate for his present understanding. The appropriateness of this public and explicit material for present understanding is judged in terms of the rate of wrong responses he is making to queries at one level or another of the subject he is studying. In general, computer-assisted instructional programs keep a person at a level until he or the program moves to a more advanced level or until the subject is inferred to be making mistakes at his present level of study at the rate of about 1 or 2 questions in every 10. When this latter inference is made computer-assisted instructional programs then place the person with material at a presumably lower level.

Do not confuse the individualization of instruction in the above sense in which it is developed by a so-called Teaching Machine with the cultivation of individuality as it might be developed by what I like to call an Education Machine or Mechanical Book. The cultivation of individuality is a higher goal in education than is drill and practice leading to knowledge assimilated in only public and explicit terms.

Although the construction of an Education Machine or Mechanical Book which will cultivate individuality is a difficult task, it is not an impossible task. At the present time, the United States Office of Education is supporting a project in which several colleagues* and I are providing a prototype Information System for Vocational Decisions (ISVD). An ISVD is basically a Career Machine (Tiedeman, 1968); a Mechanical Book for the realization of purpose in career development. However, it is now also almost possible to turn the ISVD Career Machine readily into an Education Machine. This is an assertion of considerable importance for the credibility of my 1980 Learning Resources Center. Therefore, I shall indicate more specifically what the ISVD Career Machine will actually be like and do and how the conversion to an Education Machine might then occur.

4.2 A Career Machine: The Information System for Vocational Decisions.**

The Information System for Vocational Decisions will have, as integral parts,

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*Principal Investigators of ISVD are Russell Davis, Richard Durstine, Allan Ellis, Wallace Fletcher, Edward Landy, Robert O'Hara (Executive Director), David Tiedeman (Chairman), and Michael Wilson. Research Associates of ISVD include: Duncan Circle (1967-68), David Clemens (1966-67), Lawrence Lerer (1966-68), and Eugene Wilson (1966-68).

**This is an abstract of "The Role of Decision-Making in Information Generation: An Emerging New Potential in Guidance," ISVD Project Report No. 12, February 1968 which I wrote. The abstract was prepared by the Editors, CAPS Capsule, Ann Arbor, Michigan, Counseling and Personnel Services Information Center, University of Michigan. The abstract is published in Vol. I, No. 3 of the Capsule, pp. 1, 10, June 1968.

three primary files, each devoted to a particular type of information or data; educational, vocational, and military. This information will be arranged in such a way that the user may go as he wants to do so from a general review to a more specific focus, at which level he can begin to weigh various alternatives. As he searches on he will be able to clarify his ideas until he makes a choice, either one of the alternatives or further exploration.

While the educational and vocational files move from generalization to specialization in their arrangement, the military file will move in the direction of greater promotional opportunities. Thus differentiation is central in both forms of file movement but the former largely differentiates in terms of function, the latter in terms of responsibility. Of course, both files differentiate somewhat in terms of both function and responsibility. The emphases of each will just vary between the two types of files.

While the user is exploring and clarifying his ideas regarding career possibilities, he will have opportunities to learn concepts from career, self-concept, decision-making, and other psychological areas. He will also receive instruction in the use of the data files.

A decision game will be employed to help the individual recognize areas of conflict in personal characteristics and future alternatives for education, work, leisure, and family. To play the game he can use the data of someone else's life, or that of his own. If he uses that of his own, two additional files will be required. One will contain his past and current educational and psychological characteristics. The other will allow the individual to compare his characteristics with those of persons

who have achieved success in particular areas and whose records are also in the file.

A third type of file will store the person's summary statements requested after each decision, as well as his career-concept as it has evolved from his review, exploration, and clarification processes as he used the data file. This will also serve to point up any lack of congruency. To aid still further in this process of weighing personal attributes and decisions, the O'Mahoney (1968) method of relating self impressions to work by means of the paired comparison of ambiguously pictured work situations will be used to provide a clearer understanding of the inquirer's actual and ideal selves.

As in any information system, access to the ISVD data files will depend on various index terms and links between the files and the cross-referencing of categories from file to file. Such categorical and connective terminology will be developed from vocational-development, vocational-maturity, and agency-development theories. These three areas will be used as in the Tiedeman-O'Hara (1963) paradigm of decision-making.

The ISVD will be programmed to monitor or assess the quality of the decisions that are based on the material in the data files. This same monitoring process can provide the user of the System with information regarding how abstracts and the thesaurus of index terms are generated. With this knowledge, he can use the information collected during his review of the data files to construct his own thesaurus of terminology and to go on and process the information. A small, personal, esoteric information system is thereby created because it has also become an explicit part of the individual. The individual has succeeded in moving private and tacit

knowledge into the explicit realm which could also be public if he elected to make it so. If the process is truly to be completed, the monitoring system within the person makes him aware that language and experience never perfectly correspond--that paradoxically, his understanding of his actions and experience cannot be perfectly construed. Perforce then, the individual learns that he must generalize when expressing and interpreting to others.

Generalization also must occur when the individual converts the learning that takes place in a simulated situation to real life experiences. The counselor, using his own interaction with the client and drawing upon his skill in assessing creative processes, becomes the first agent of generalization. Using this same assessing skill but focusing on the substance of the individual's situational role obligation, a military, school, or work supervisor becomes the second agent of generalization.

The ultimate agent of generalization is the individual himself. From weakness and incongruencies that become apparent in the simulated situation, he gains realization of the knowledge and lack of knowledge in his personal guidance system and the consequences on his life.

The ISVD can therefore provide the series of "dress rehearsals" which a person needs in career in order to achieve realization of self processes in the choice processes of career. Each "dress rehearsal" represents an imposed opportunity to make errors in the abstract before they become fatal. However, the proposed relationships between the inquirer and both the counselor and the supervisor represent an additionally imposed opportunity to insure that "the play goes on." The abstrace must be brought into action. The ISVD Career Machine therefore constitutes the "instrument"

(Richards, 1955) required to bring the tacit over into the explicit quadrants of knowledge. However, the human relationships also implicit in the ISVD career theory further insure that the explicit is brought from the realm of thought into the realm of action as well.

4.3 An Education Machine. The Education Machine or Mechanical Book will be constructed along the lines of the Career Machine. The attitude expected of the Education Machine's user will be that of inquiry. The basic files of the Education Machine will be those of subjects, not just that of career. The monitoring of the Education Machine will be programmed to deal with the elements of individuality which the inquirer can be expected to exhibit while addressing the assimilation of a subject's structure as programmed in 1) its basic files, 2) the game-like context in which it can be reasoned with, 3) the specific contexts in which the inquirer elects to use the subject in creating his esoteric form of it, and 4) misconceptions expected during assimilation.

The basic learning in the Education Machine will be the same as in the Career Machine, namely that language and experience never perfectly correspond. This realization will come in the Education Machine in the person's experience with the subject he is attempting to assimilate; in the Career Machine, with his career he is attempting to understand and gain personal control of.

As with the Career Machine, generalization must occur when the individual converts the learning that takes place in a simulated situation into real life experience. However, in the case of the Education Machine, a tutor, not a counselor, must use his interaction with the student and his skill in assessing creative processes in his subject to facilitate

this generalization. Using this same assessing skill but focusing on the substance of the individual's situational role obligations, the work supervisor, clergyman, and/or family member becomes the second agent of generalization in conjunction with the Education Machine and the tutor.

The ultimate agent of generalization is the individual himself in the Education Machine as in the Career Machine. From weakness and incongruencies that become apparent in the simulated situation he gains expanding realization of the knowledge and lack of knowledge in his education and the consequences of both on his life.

As was the case with the Career Machine, the Education Machine will therefore also provide the series of "dress rehearsals" which a person needs in order to achieve realization of self processes in the choice processes of any subject. Each "dress rehearsal" represents an imposed opportunity to make errors in the abstract before they become fatal. However, the proposed relationship between the inquirer and both the counselor and tutor represent an additionally imposed opportunity to insure that "the play goes on."

5.0 Career Skills and the Learning Resources Center

The section on the Career Machine specifies the reasoning processes involved in career development which I think should be a part of everyone's education. However, there are vocational and social skills involved in career which also require attention and cultivation.

Today's vocational literature abounds with advice that a person will in the future have not one but many jobs in his life. In the future, a person must therefore have not just an <u>occupation</u>; he must have a <u>vocation</u>.

As Morley and I (Morley and Tiedeman, 1966) have written, vocation is an individually derived theory of employment which lends continuity to a person's several occupations and many jobs as he thinks about both together. There are many implications of such personal knowledge for the secondary educator, particularly the vocational educator. Some of these implications were recently pointed out by Gross (1966) who advocates that the study of social and personal skills be incorporated into the curriculum in a modernized vocational education. These implications are also appearing in some of the better projects organized under terms of the Manpower Development and Training Act in the United States. In these better MDTA projects, education in social and personal skills accompanies education in work skills. By my above definition, education in social and personal skills is a part of vocation. Hence it should also be construed as a part of an improved vocational education. This is the first assumption underlying this effort to bring a new potential in career education into secondary education.

A person who both knows how to work and how to operate in the social and personal environment of work has acquired the theory of a vocation as I define that theory. He is also well on his way to understanding both the personal and common good which is a part of the individuality which I seek in my secondary education. However, there is still a more highly developed form of vocational capacity, namely career competence. Career competence represents for work the actual individuality which I seek. A career is both a sequence of jobs linked in the continuity of personality by the person, a vocation in short, and a sense of one's responsibility and initiative in that vocation.

The sense of personal responsibility and initiative in one's vocation as defined is not readily attained. In fact, it is a lifetime attainment which is always in flux, never complete. Nevertheless, the feeling that one is in control is a natural feeling capable of awareness. It is man's singular characteristic of his humanness.

There are two elements of this feeling of being in control which are extremely relevant to career capacity or career development. One of the elements is the objects, ideas, or goals themselves which one controls. This element arises internally as feedforward (Richards, 1968). Feedforward is that existing but unarticulated sense of something you are trying to bring into being, a poem in the making, this paper as I first conceived it, a new development, a vocation, or simply your present understanding of what I hope is now at least a vague idea of yours, not just mind alone. The second element of the feeling of control which is relevant in career development is the sense of responsibility and initiative one feels toward himself and others as he works to articulate his feedforward. It is this sense of responsibility and initiative for one's vocation, or a sense of agency which is the prime subject of guidance and psychological services in my Learning Resources Center. An effectively functioning sense of agency in each citizen will bring us to a new level of existence, a level in which individuality functions for personal and common good.

6.0 Identity and the Learning Resources Center

6.1 Adolescence and Identity. Erikson (1959) fixes the crisis of identity in the adolescent period. This is why I chose the period of adolescence as the lower bound for secondary education in my Learning Resoucres Center.

Adolescence brings with it many bodily changes which find expression in the socio-psychology of the person as he educates himself. It is a period when the adolescent strives to find and to assume a position in life which he wants. The Education Machine which I have outlined contributes to the ideological growth which grounds and determines identity during the period. The Career Machine which I have also outlined founds this burgeoning ideological identity in the dimensions of job, occupation, vocation, and career. The career skills which have also been described add the social context in which identity forms. However, the Learning Resources Center must rely upon interactions with people to round out the emerging identity in adolescence.

6.2 A Sense of Agency in Career and a Sense of Identification. I believe that every citizen must actually achieve this higher level of individuality in our progressing civilization which I have been specifying in this chapter. The ISVD Career Machine set in the context for career skills in my Learning Resources Center 1980 holds promise of permitting achievement of this aim. However, integration of community resources for the common good, individualization of instruction, and education for individuality as I have previously outlined these points must all be tempered in the fostering of identification, the fundament of identity.

The society in which I envisage my Learning Resources Center will be without many of the overt structures in which we were raised and have so far raised our children. These overt structures have furnished guides for social expectations, models to be envied, and pathways for entry and progress. My Learning Resources Center will atempt to move these structures from external to internal bases. The ISVD Career Machine will attempt to

do this by providing an overt linguistic framework within which each person can know the balance of authority of form and of experience which he creates for himself and uses as his cue for satisfaction in acting responsibly while striving. The Education Machine will generalize this effect in other subjects. However, the primary difficulty will then move from one of present feeling of cramped opportunity to one of future feeling of missing limits. There will be too little societally built-in feedback provided by fulfilling the expections of others.

The Teaching Machine in the image of present kinds of computer-aided instruction will furnish one set of limits for expected form in experience. The Career Machine and its companion Education Machine will set other kinds of limits, particularly those having to do with the origination of intention and the evaluation of progress in intention. Finally counselor and tutor will be models and cultivate generalization of purposeful action in all realms of living. However, the Learning Resources Center will additionally have to foster all kinds of contact of students with persons whom they may be attempting to emulate, initially probably unconsciously. This contact could first be in the form of vivid sound movies and the like. The contact can then be further augmented by the provision of game-like conditions in which acts can be undertaken and in which consequences can be experienced seriously but without real harm. But simulated experience will have to give way to real experience as quickly as possible in order for the authority of experience to have adequate play in balancing a person's authority of form as he strives. This requirement then merely underscores the already stated need for setting the Learning Resources Center into the entire set of services in its community. This is the way

that models of envy, simulation, and excellence can be shared both with adolescents who are aspiring to do and with adults who are seeking new careers.

6.3 Learning in Exepriencing. Identity is ultimately forged in the crucible of action. It is in action that the individual is both ultimately himself and subject to the evaluations of that self by others, others to be sure who have come to mean much to him, to paraphrase Erikson (1959).

These facts provide additional reasons why secondary education should take place in a Learning Resources Center, not in a school. A Learning Resources Center offers the flexibility required for a pedagogy based in a learning of experiencing, not in a learning of telling. As long as there are figures for identification, facts which can be turned into information in the crucible of action, and expectations for excellence, we need have no fear that the Learning Resources Center will continue the knowledge of our civilization. Instead we can derive hope that learning will also more regularly become a living part of a person's personality, that career can become personally determined, not externally imposed, and that life can be based as much in satisfaction as in success, a balance right now hardly ever even considered. Individuality will become more of a universal reality. However, it will be an individuality based in mutuality, not in selfish independence.

6.4 Other Careers. I specified that the secondary education of which I spoke was for adolescents if they progressed into it without a needed period of moratorium and for adults who needed an education based in other or additional social as well as ideological development. I trust that the

discussion of identity above makes it clear why I think that secondary education for identity is as appropriate for adults starting other careers as for adolescents starting their first careers. The context of individualized instruction by way of the Teaching Machine, of the Career and Education Machines, of career skills, and of a community of service for a sense of community in service is the context creating additional as well as initial careers. These are the conditions in which identities are born and nursed until healthy enough to exist independently.

7.0 Mental Health, Education, and the Treatment of Mental Illness 1980

7.1 Psychology and Mental Illness 1980. Mental illness cannot be exactly estimated, because definitions and understanding are both highly amorphous. Nevertheless, at the present time, a rate of about 1 mentally-ill person in every 10 persons is ordinarily accepted as a reasonable rule of thumb. I have no reason to assume that this rate will dwindle. Hence I elect to plan pessimistically expecting mental illness at this high rate, thereby not blinding myself to its probable continuing existence.

It is a moot point as to where to locus of mental illness rests. There is clear evidence that the psychogenic hypothesis concerning the confused mental state holds in a substantial fraction of cases of mental illness. However, there is also growing evidence that blood changes are at least associated with, and may even be causing or be cause by, severe psychotic states. For this latter reason, chemotherapy for mental illness should be expected to be in a highly advanced state by 1980. This will mean that the psychologist in our Learning Resources Center will either have to be trained better in medicine himself or to rely more heavily on

the community resources in medicine. He can do the latter if health and education are joint functions in a community center in which our Learning Resources Center exists.

Among those cases of mental illness in which the psychogenic hypothesis seemingly still holds good, there is also growing evidence that the confused mental state is grounded in a person's family, society, and culture as much as in himself. These realizations are giving rise to new forms of social treatment which focus upon the community and the healthfulness of its climate as resources in curing mental illness.

The new social treatment of mental illness is taking two major lines in its present development. On the one hand, electronic monitoring devices are being placed in the body or on the person of a mentally ill patient. Such a patient is then permitted to roam his community while his psychological state is being continuously monitored at a central receiving center. This treatment permits a patient to live a somewhat more normal life until an acute psychological episode becomes somewhat imminent, in which event he is warned to hospitalize himself or is brought into hospitalization if for any reason he cannot do so or refuses to heed the warning.

The second direction which the new social treatement is taking leads to the encouragement of sociability, further education, and employment. This form of treatment recognizes that health is predicated on coping ability in human relationships and on economic independence.

Both of these lines of social treatment are likely to expand and to improve between now and 1980. Therefore, the psychologist in the Learning Resources Center of secondary education 1980 might well be intimately involved with electronic monitoring of students' psychological states in

its medical wing and with secondary prevention of mental illness through both education and employment counseling along with its Career Machine. The psychologist engaged in educational rehabilitation of the mentally ill students will also probably find himself needing to use behavioral therapy as a technique. This behavioral therapy cannot of course engender the individuality I seek; it can only create conditions in which individual choosing once again becomes somewhat more possible. Therefore, since the use of behavioral therapy is essentially antithetical to the sense of individuality my Learning Resources Center is attempting to create, we must limit its use to extreme cases and continuously attempt to minimize the risk that re-attainment of the necessary curiosity which underlies choosing is then erroneously accepted by the person helped as the actuality of choosing.

7.2 Psychology, Guidance, Education, and Mental Health in the Learning Resources Center. The mentally ill will be educated in the Learning Resources Center to the extent that their confused mental conditions permit education at any given moment. However, as I have argued (Tiedeman, 1961), the primary prevention of mental illness requires an educational, not a medical stance.

The guidance activities which I have outlined in conjunction with the cultivation of career and of a sense of agency in learning foster mental health in my Learning Resources Center. The services provided by a counselor in such primary prevention of mental illness and those therapeutic activities of the psychologist undertaken in interest of secondary prevention of mental illness are both based in the functioning of the ego. However, the psychologist is primarily involved in the reconstruction of

belief in one's own curiosity which is required if choice is to take place at all. The counselor for his part is involved with that same curiosity at the time when the structures of choice are actually being formed, within it. Furthermore, the counselor is involved in bringing into awareness the fact that choice is and should be taking place.

These conditions underscore the necessary joint reliance of psychology and guidance on ego processes. It also suggests that the two are intimately associated by their common interest in curiosity and choice processes. However, therapy in mental illness makes education possible. The cultivation of purposeful action in counseling makes education effective. Therefore both psychological and guiance services will be present in my Learning Resources Center. Both counselor and psychologist can do the same things in that Center so far as I am concerned so long as each also does the distinctive things dictated by differentiated conditions. However, the presence of the Education Machine or Mechanical Book and its supporting tutor will round out the triumvirate of functions necessary not only to educate and to make education effective, but also to make education contribute in the expansion of our civilization.

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